UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

09 October 1979 Vol. 5, No. 19

Send all comments, criticisms and contributions to the editor: T. W. Lanzatella
University Computer Center, 2520 Broadway Drive, Lauderdale, MN 55113.
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NOTICE OF CHANGES TO THE SYSTEM

NOS Changes

Tom Lanzatella converted the mod DSTAMP. This mod causes ACCFAM to output the SIDT account file message.

Kevin Matthews corrected an error in queue file processing which caused files routed to site BC from jobs which originated from sites other than BC to get hung up in the queue. Kevin also repaired a critical error in disk error processing in MTR.

Tim Hoffmann contributed the first installment of his DELAYQ feature. This change namely installs a few symbols. Tim also installed the following changes.

1) Cosmetic changes were applied to modsets EBRIEF, ENQMOD and SUN.

2) An unspecified error in CPM function 113, return pack information, was corrected.

3) CALLPRG memory management was cleaned up. CALLPRG now makes fewer memory requests and passes ECSFL to the loaded program.

4) The order that CALLPRG uses to search for the index was changed so that pack SPL is searched first, then the default family.

5) Program MEM was repaired so that the request to return maximum validated ECSFL actually works.

6) New source versions of the programs ARCLIST and RELOAD with unspecified changes were installed.

Marisa Riviere installed a new CALLPRG index entry parameter, NF. This option causes the field length required to load, specified in the loader tables, to be ignored. The load FL will then be the amount specified by the MF or FL parameters. This change was installed chiefly for SPSS which has an HHA large enough to accomodate all the largest overlays. SPSS manages to own field length and never needs an initial FL as large as the HHA. See DSN 4, 14 p114, for a discussion of how CALLPRG handles field length.

Jeff Drummond installed the following changes.

1) Programs BLOCKER was changed to correct an error where the unused bit count was being set to an incorrect value causing blocks to be truncated or padded with extra blanks.

2) Several error/warning messages were corrected in EXPLIB.

3) A space saving technique instituted by CDC at R4 was installed in some local code in MAGNET.

4) Jeff installed some PSR code which corrects a possible 1MT hang on label processing. From PSR NSOC953, summary 501.

5) A PSR to RESEX was installed which repairs an error wherein a D=HY parameter would not default to 7-track if 9-track was the installation default.

6) The AMAS account file messages output by 1MT were corrected to properly indicate the format of the assigned tape. This was on TWL conversion error.

7) The mod MSGLIM was converted to R4. This installs message limit processing in 1AJ. Jobs will now be aborted with INITIAL MESSAGE LIMIT if only RD messages remain. Normal exit processing will be allowed. MESSAGE LIMIT will be issued when no messages remain and no exit processing will be allowed.

8) Termination processing in MAGNET was corrected as that no dump will be produced unless our actual error condition prevails.

9) DSD was corrected so that the E,P-display is properly recovered after a L3 deadstart.

10) Modsets DSDU1, AUTUNL, PMS and ROTARY were reinstalled with cosmetic changes.

Brad Blasing contributed the following changes.

1) A CDC TWX mod which replaces our mod CPYBU1, a mod which installs enhanced error messages in COPYB, was installed.

2) The USERS/DSD E,T-display now properly reflects ring status and equipment mnemonics in the E,P-display are now correct.

Bill Sackett installed a new program called PMS which is used to dump the PMS table to a file and is used primarily by the stimulator. Bill also changed DFTERM, a utility used to dump dayfiles. The change causes DFTERM to abort on certain error conditions related to dayfile status and disk error status. Causing DFTERM to abort on these error conditions makes a reattempt possible after the error has been fixed.

KRONOS Changes

Bob Williams installed a change to 1MT which makes the program work correctly on a 2X PPU machine, such as the 720.

Kevin Matthews installed changes to TRANSIT which allow KRONOS to talk to NOS R4.

Steve Collins converted the NOS version of CPORT to run on a KRONOS system.

Bill Sackett installed the following changes.

1) A mod to DFTERM identical to that described above was installed.

2) Program COST was converted for a 720.

3) The NOS version of DUMPPF was converted to run on a KRONOS system.

4) The program PMS was added to the KRONOS WPL. This program has been on the KRONOS deadstart tape for years.

5) Program SYSEDIT was modified to allow more programs in CM.

PROPOSED CHANGES TO THE SYSTEM

PROCESSING OF SPECIAL FORMS - by S. P. Nachtsheim

Operation's is planning to expand the availability of special forms to users. (See DSN Volume 5 Number 6, March 20, 1979.) With the installation of release 4, it appears that most of the system code is in place to allow special forms to be used at Lauderdale through batch I/O with relative ease. In order to implement a special forms capability in an automated fashion, it is necessary to have two system changes made.

1) The begin printing dayfile message must be changed to include the forms code for a special form being printed. This will enable accounting to charge for set-up and/or additional amounts for pages printed.

2) Some validation ought to exist to prevent certain users (i.e., students) from utilizing special forms since utilization of special forms will incur additional expense. It is proposed that any student account be prohibited from using special forms. This means that the route utility would have to be changed to see if the person routing with a forms code is a non-student user. This is one suggestion for implementation of a validation procedure.

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DEVICE IDENTIFICATION FOR PERMANENT FILES - by S. P. Nachtsheim

There is potential for an accounting problem as the FMD disks are brought into the system. Accounting currently assumes a default track size of 227 pru's. The track size for a FMD is considerably larger. While no decision has yet been made about allowing user files to default to FMD type devices, we may eventually run into this situation. It is therefore proposed that the permanent file message be changed to include the device type on which the permanent file is being stored.

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TO DROP OR NOT TO DROP - by B. E. Blasing

CCL, while executing a procedure via the BEGIN statement, uses three scratch files to keep track of global variables and its position within the control statement file. They are called ZZZZZC0,1,2. For the first part of my proposal, I would like CCL (specifically REVERT) to return these scratch files when it is through with them, i.e. when it REVERTs back to the job level. Secondly, I would like to NODROP these scratch files while the procedure is running. This would remove the restriction of not using the CLEAR, NEW, or OLD control statements if a CCL procedure is not exited by a REVERT (i.e. thru EXIT or by typing STOP, which are not the usual methods of exiting procedures), the scratch files will be left lying around NODROPed. This is unesthhetic only and does not cause problems and will only be noticed from TELEX origin. Note that the default file (ZZCCLAA) for the .DATA feature will be neither NODROPed nor returned.

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MALET - by W. T. Sackett

MALET should have a DSD entry so that it can be brought in at the last control point avoiding the necessity of storage moves for many of its PPU routines that are suspected to not pause anyway.

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NEXT - W. T. Sackett

N.XXXX. should bring XXXX up at control point N even though all control points are idled. Perhaps this could be implemented with an N.NEXT. command as was present in MACE. This mod would be useful for bringing in just one package (e.g. MAGNET) without having all other waiting jobs roll in.

SYSTEM MAINTENANCE: People and Procedures

Last Week's System Group Meeting - by T. W. Lanzatella

The following proposals were presented and discussed.

1) Tom Lanzatella's proposal to disable the Hollerith code check in 1CD was accepted in principle (see DSN 5, 18 p146). Don Mears offered an alternative implementation where Hollerith code errors would be treated like compare errors. Whenever a code error is encountered, the card reader will stop and the operator

will mark the location so the user can correct the error. We stipulated that this behavior ought to be propagated through all high-speed and RJE sites in the future.

2) Jerry Larson's proposal to deal with plot and ERB tapes of jobs which bomb was discussed at length but no real solution was reached. We concluded that the best solution is to have operations write end-files on all tapes after they have been used.

Larry Liddiard led the remainder of the meeting.

1) People's titles were discussed and selected. Most titles will be changed to reflect the functional nature of work performed.

2) Release 4 problems were enumerated.
   a) The system now charges for tape PRU's skipped. This has caused some pain for users. Jeff Drummond will investigate.
   b) MAGNET is still occasionally refusing to honor a TDAM - under investigation.
   c) TELEX is still scrambling output - under investigation.
   d) Banner Pages are sometimes spread over two pages.

3) Three motor generators are due on 15 October. Additional memory for the C172 is due on 15 December.

4) Four more phone lines have been ordered for the 1200 baud rotary.

5) Thirty ports will be added to the 2550.

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CALLPRG AND LIBRARY TAPE NEWS - by M. Riviere

On October 2, S. Yen modified the CYBER Callprg Index in order to introduce three new fetch type packages: DYST2A, SINDSCL and HICLUS. These packages are multi-dimensional scaling and hierarchical analysis programs. Documentation for these packages will be available in the Reference Room.

Also on October 2, E. Schleske introduced the control card callable package XFER. XFER was announced in a previous issue of the DSN. XFER was introduced on the CYBER Callprg index as well as in the CDC 720.

On October 9, J. Mundstock changed the current MANTRAP routine on the CYBER Library Tape. The change was due to a small problem being repaired in the new version.

There are no scheduled modifications for October 16. The next set of Callprg and Library Tape modification will be implemented on October 30. Modifications for that date should be submitted before noon on October 18.

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KRONOS TO NOS PROCEEDINGS - by W. T. Sackett

The following are the notes from the system meeting discussion of the meritss conversion to NOS 1.3. Initials indicate persons primarily responsible for the area

in question. In each of the following areas NOS should be made:

a) compatible with meritss.
b) Documented to be different in a conversion guide. Or,
c) corrected administratively.

1) PERMANENT FILES

Bits moved for protected files. Other catalog differences? Device type *DY* for current *DM* on meritss. When and why will be go to the 16 work catalog entry? Family names? User test periods - tentatively scheduled to start Nov. 11 on Sundays from 1 p.m. to 5 p.m.

2) TELEX

Run should give date and time in brief.
1200 baud.
Autobaud on front end?
Rotary check.
1TA default field lengths.
1TD configuration file. Will lose a 6676 with addition of front end.

3) LOADER

ABS files with default cyber loader require more FL to load (up to 14K more than amount calculated from file size) and 3 to 4K more for rels. One reason for administrative decision to up default FL from 55K to 61K.

4) TRANSIT AND CO.

AROUTE, ASEND, ROUTE, SEND, SUBMIT.

5) KCL

Document on converting to CCL will be *KCL2CCL* writeup. Size was renamed and print is replaced by note.

6) ACCOUNTING

Common accounting requires administrative decisions about permanent file changes, report format, where to run meritss accounting (on the Cyber 172?), etc.

7) COMPILERS AND RELATED PRODUCTS

- MNF, M77.
Require Cyber loader to be default. TSF from meritss to be used on MIRJE. Mods available from WTS. Since field length will be major adjustment factor the field length used to compile should be listed on the dayfile along with or in place of CP time used.
Mantrap
- Libraries. (WTS,EJM,MF)
MINNLIB Implementation?
- Pascal. (ABM)
- Snobol. (ABM)

- Cobol. (SR,EJM)
Interactive? Does it require 60K? More info needed. Does Meritss have a contract for Cobol 5? Probably will lose the cobol subsystem in the conversion.
- Basic (WTS)
Does Meritss have a contract for Basic 3.5? For Basic 3.4?
- APL. (TH,JPS)
Aplum the same on all machines?
- Compass. (JJD)
What changes in going from KRONOS to NOS 1.4 version? Requests to validation field length even if not needed. This should be fixed.
- PROCPAC. (KF,DN)
PROCPFM does not work with new record manager. Any other PROCPAC problems?

8) OPERATING SYSTEM MODS. (JJD,TWL,KCM,WTS)

CPM functions were recorded. ECS interactions (ECSFWA, enable ECS/functions, etc.). WTS has a list of mods which were not converted from KRONOS to NOS/460 and from NOS/460 to NOS/485. JJD, TWL, KCM, and WTS should discuss.

9) CALLPRG PACKAGES. (MR)

ABS ones are probably all right. May have to take a few like SPSS from MIRJE.

10) WRITEUPS. (MR)

11) LIBRARY/GAME (JLL)

Same name implies same package.

12) UPGRADE DOCUMENT. (WTS)

A preliminary version will be passed out at the 10/11 systems meeting for comments.

13) S2000. (SPN)

New version requires 57K. An additional reason for administrative change of default field length to 61K.

14) PROFILE. (SPN,RAW)

Since MIRJE will be using profile winter quarter meritss should also. Multi-mainframe decision would impact this. Hash project numbers? (Sounds like a reasonable thing to do).

15) MULTI-MAINFRAME.

Only way to share packs. Will not go to MMF initially for a variety of reasons. Profile project take note.

16) COMMON TIMESHARING GUIDE. (WTS,RTF)

Based on the meritss one.

17) OPERATIONS. (JMS,BJS)

If same operators guide how will hardware/software differences be made clear?

18) PERFORMANCE.

Cover all areas.

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Cyber 74/172 Deadstart Dump Analysis from Monday, 24 September - Thursday, 04 October - by K. C. Matthews

Tuesday, 25 September

08:25 Cyber 172
A disk pack from systems time was left on a drive in place of the normal permanent file base pack. A level zero deadstart was required when this was noted.

17:25 - Both Machines
An ECS error forced the Cyber 74 and 172 to crash. The error was solid, and the CDC engineers were called. One of the two multi-mainframe machines can be used when ECS is down. The Cyber 74 was kept in operation since it had batch processing to do, and since the 172 time-sharing peak load more or less passed. At 1914, the Cyber 74 was deadstarted again with ECS up.

Wednesday, 26 September

10:15 (DD2004) Cyber 172
1TA hung with a DEQM monitor function. This is probably a TELEX problem.

Thursday, 27 September

16:35 (DD2006) Cyber 172
1RI hung trying to load an illegal mass storage driver. Some odd junk in the central memory file name table was interpretted as a rollin file, and 1RI tried to roll it in. There is no clue as to where the junk came from.

04:20 (DD2007) Cyber 74
PP program 1CJ hung when TELEX was stopped at end of operations. A strange looking file was attached to the TELEX control point. There is no clue regarding the origin of this file.

Friday, 28 September

10:35 (DD2007) Cyber 74
PP program 1DU hung when after a memory change was entered. The dump must have been taken after the recovery process was part way in process, since only the deadstart PP memory test is found in each PPU.

10:46 (DD2010) Cyber 74
After a recovery from the previous deadstart, 1CJ hung. Another junk file appeared to be at the TELEX control point. This is like what happened at end of operation the day before. Again, its hard to tell how the bad FNT entry appeared and for how long it had been there.

14:46 (DD2011) Cyber 74
IMS hung when an initralize of a scratch pack was attempted. There were disk errors during the initralization attempt. It was discovered later that KCM had introduced a bug in disk error processing which hung the PP.

16:47 (DD2012) Cyber 74
PP program 1SB hung at the EXPORT control point. Another bad file name table entry. No resolution yet.

17:35 (DD2013) Cyber 74
PP program 1CJ hung while dropping tracks on the shared queue device, pack SHA. The track really belonged to an output file on the 172. This has happened before, and there are no clues yet as to the cause.

23:01 (DD2014) Cyber 74
1CJ hung again as at 17:35 today. The job it was processing was a delay queue job. But by the time the job was running, its input file track was used by the Cyber 172.

Saturday, 29 September

17:23 (DD2015) Cyber 74
1CJ hung when TELEX was stopped at end of operations. As usual, a bad FNT entry was at the TELEX control point.

Wednesday, 3 October

09:36 (DD2017) Cyber 74
1RO hung processing a disk error on Channel 30 on Wednesday, and the disk error processing bug mentioned earlier caused 1RO to hang often. The channel problem and the error processing code were both fixed on Thursday, 4 October.

11:10 (DD2021) Cyber 74
1RO hung again on Channel 30.

14:09 (DD2022) Cyber 74
1RO hung again on Channel 30.

17:37 (DD2023) Cyber 74
1RO hung again. After the recovery, pack SPL could not be accessed because "error idle" status was set on that pack. Channel 30 is used to access SPL on the Cyber 74.

01:44 (DD2024) Cyber 74
CIO hung on Channel 30. A level 0 deadstart would still not clear the error idle status on SPL. A level 0 on both machines was done.

13:00 Cyber 172
1TO hung. The system had been hung for a few minutes. Dumps to the 67X tape units did not work. After the recovery, it was determined that 67X units did not work from the 172. Since no dump could be taken, the cause of the 1TO hang cannot be determined. The system was given to the engineers, but when the problem was not solved by 14:15, the system was deadstarted with all the 67X units down. The problem was finally fixed at 19:40.

02:28 Cyber 172
The 172 was deadstarted to help remove the error idle status from pack SPL.

Cyber 170-720 Deadstart Dump Analysis (9/10 - 10/7) - by R. A. Williams

Date	Description	Tape
790914	The 6676 multiplexer most recently upgraded for the 170-720 hung the channel, and thus the system, twice. The CE's are working on the problem.	N.A
790918	The 6676 hung the system four times.	N.A
790924	The system went down five times before it was discovered that QFM had been loaded off the deadstart tape incorrectly. The 607 tape controller is apparently bad.	N.A
790928	The dew point recorder settings were incorrect so a slight humidity change powered down the system instead of giving a warning.	N.A
791003	The DDP channel hung empty. The dump indicates a status request had just been made	DD-1

... And now the good news. 844 disk controller (7054) channel 4 has been fixed. Unfortunately 6676 mux channel 6 has stepped in to handle the role of channel hanger quite well with understudy DDP channel 12 possibly waiting in the wings.

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Plotter PDP11 Crash Analysis - by D. W. Mears

There have been no plotter crashes since 8/23. Unfortunately, I have no explanation for why the plotter is working so well. We have made software changes for the NOS R4 conversion and for the new plotter interface, and hardware changes to repair and install the new plotter interface to fix the "plot shifting", problem. One of these changes must have inadvertently fixed the last plotter problem.

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TELEX and TELEX PDP11 Crash Analysis (9/21 - 10/4) - by D. W. Mears

9/24 0800 There was a problem loading the TELEX PDP11, so the operators ran a link test on both machines. Due to an error in the link test procedure, the link test detected an error when actually everything was o.k., and field engineering was called in. By 8:30 the link was declared not broken, and TELEX was brought up.

9/24 11:20 TELEX on the 172 had to be stopped and brought up again because the PDP11 est entry had been left "off" due to the confusion at 8:30 when TELEX was brought up.

9/26 9:57 ITA hung on the 172 trying to drop garbage FNT entries which were probably created by a TELEX pot reservation error.

9/26 10:15 Same as above.

10/03 12:55 ITO hung on a Function 76 after the system had been hung for a long time due to a tape problem.